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ABSTRACT

The purpose of this study was to evaluate the agricultural communications curriculum in Texas high schools using perceptions of agriscience teachers (n=145) in Texas high schools. Another intention of the study was to determine perceived abilities of agriscience teachers to teach agricultural communications courses. Answers to questions related to the characteristics, competencies, and perceived abilities were sought via a descriptive survey. The study found that 67% of the teachers had little or no experience in the field of agricultural communications. The teachers also indicated their perceived level of teaching skill pertaining to communication techniques and procedures ranged from fair to good. (Contains 18 references.) (DDR)

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ANALYZING THE TEXAS HIGH SCHOOL AGRICULTURAL COMMUNICATIONS CURRICULUM

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Abstract

The major purpose of this study was to evaluate the agricultural communications curriculum (Agriscience 315) in Texas high schools, using perceptions of agriscience teachers in Texas high schools. The secondary purpose was to determine perceived abilities of agriscience teachers to teach agricultural communications courses. As a means of accomplishing the purpose of the study, answers to the following questions were sought. (a) What are the characteristics of Texas teachers who were teaching agriscience in the 1999-2000 school year? (b) What competencies do teachers think students should master upon the completion of agricultural communication classes in Texas high schools? (c) What are the perceived abilities of agriscience teachers to teach agricultural communications classes? The format for this study is a descriptive survey. A proportional and stratified sample of 200 agriscience teachers was selected. A total of 145 surveys were returned. The response rate for this study was 72.5%.

This study found that 67% of the teachers had little or no experience in the field of agricultural communications, but they agreed the competencies related to communication techniques and procedures should be incorporated in the agricultural communications curriculum. Agriscience teachers also indicated their perceived level of teaching skill pertaining to communication techniques and procedures ranged from fair to good.

Introduction/Theoretical Framework

The current goal of agricultural education is to prepare and support individuals for careers, build awareness and develop leadership for the food, fiber, and natural resource systems, which accurately articulates the vision of the future of agriculture (Case & Whitaker, 1998). The main mission of agricultural educators is to convey practical application and transfer of knowledge, skills, and attitudes into real-world settings (Phipps & Osborne, 1988). However, updating instruction in agricultural education programs will always be a challenge. Evolving from production to the ever-changing science, business and technology of agriculture involves major changes in the content of instruction (Case & Whitaker, 1998). The agricultural evolvement in the United States has been advanced through literacy, personal freedom, politics, technological changes, and the growth of mass and specialized media (Burnett, & Tucker, 1990).

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This explosion of knowledge in agriculture and a parallel revolution in communications have placed a demand upon agricultural communications for curriculum evaluation (Evans, 1975).

Along with problem solving and teamwork skills, communication is a key ingredient to a person's recipe for success and is vital to a successful career in the agriculture industry (IMS, 1998). The Texas Agricultural Science Association has conducted pilot studies to determine the appropriateness of courses in agricultural communications. Texas agriscience programs recently implemented a high school agricultural communications curriculum (Lockaby & Vernon, 1998). Agricultural communications (Agriscience 315) was developed at the request of teachers of agricultural science and technology (IMS, 1998). The course includes a hands-on study of news writing, feature writing, photography, public speaking, product presentation and career opportunities in agricultural communications (Lockaby & Vernon 1998). Agriscience 315 is a technical course for students in grades 9-12 and is designed as a 90-hour, one-semester course of instruction. The communications course is also compatible with full semester, trimester, block, or accelerated-block programs (IMS, 1998). Several studies have been conducted to determine the curriculum needs for university students enrolled in agricultural communications programs (Evans & Bacon, 1994; Sprecker & Rudd, 1998). However, a review of research indicates there has never been a study to determine curriculum needs of students enrolled in Texas high school agricultural communications courses.

To revise the agricultural communications curricula, an in-depth assessment of present curricular offerings is a necessity (Larson & Hoiberg, 1987); however, researchers have noted that only a few detailed studies of agricultural communications curriculum exist (Evans & Bolick, 1982). This information brings us to the question, "What is the academic base for agricultural communications?" (Evans, 1969, p. 2). Flatt (1991) stated "A study should be devoted solely to curriculum to further investigate what courses should be required for each emphasis area, as well as, core curriculum" (p. 44).

Purpose of This Study

The major purpose of this study was to evaluate the agricultural communications curriculum (Agriscience 315) in Texas high schools, using perceptions of agriscience teachers in Texas high schools. The secondary purpose was to determine perceived abilities of agriscience teachers to teach agricultural communications courses.

Questions to Frame the Study

As a means of accomplishing the purpose of the study, answers to the following questions were sought.

1. What are the characteristics of Texas teachers who were teaching agriscience in the 1999-2000 school year as related to: (a) number of years teaching; (b) number of years teaching high school agriculture; (c) experience in agricultural communications; (d) years teaching agricultural communications; (e) number of teachers in agricultural program; (f) size of school; (g) number of students enrolled in agriscience classes; (h) predominant agricultural curriculum being taught; (i) gender; (j) age; and (k) ethnicity?

2. What competencies do teachers think students should master upon the completion of agricultural communication classes in Texas high schools?

3. What are the perceived abilities of agriscience teachers to teach agricultural communications classes?

Limitations

The following limitations apply to the study and must be taken into consideration when applying the results:

1. This study is limited to only agricultural education instructors who where teaching in public, secondary schools in Texas during the 1999-2000 school year.

2. This study is limited to those instructors whose names were obtained from the Vocational Agricultural Teachers Association of Texas Directory.

3. This study is limited to the evaluation of current curriculum content in agricultural communications programs in Texas high schools.

Basic Assumptions

The following are assumptions for this study:

1. The study was representative of all Agriscience teachers in Texas.

2. All participants of the study answered the items on the questionnaire truthfully and to the best of their ability.

Significance of the Study

Since the Agriscience 315 curriculum was established in Texas high schools in 1998, there has been no formal assessment conducted to determine what competencies need to be included. Agricultural education must meet high standards to play an integral part in preparing and supporting students to the best of their ability for agricultural careers, building awareness of the industry and developing leadership skills. It is vital that agricultural education adapt to the vast changes in technology and the agricultural industry itself.

An explosion of knowledge in agriculture and a parallel insurrection in communications have placed a demand for an evaluation of the agricultural communications curriculum (Evans, 1975). To include agricultural communications in high school agricultural education programs, a study must be conducted to aid in identifying weaknesses in the curriculum itself, as well as the instructor's ability to teach the necessary material.

The results of this study will enable high school agriscience educators to enhance their current agricultural communications curriculum and will serve as a foundation for future development of agricultural education programs.

Methodology

Design for the Study

The format for this study is a descriptive survey (Ary, Jacobs, & Razavieh, 1985). In addition to collecting information regarding Texas agricultural education teachers' perceptions of the agricultural communications curriculum, perceived abilities of instructors to teach the curriculum was analyzed. A mailed questionnaire was used to gather the data for this study.

Population and Sample

The target population of this study was all Texas high school agriscience instructors who were teaching in the 1999-2000 school year. During this year, there were approximately 1,511 teachers in the 254 counties in the state of Texas.

Because this was such a large population, it was impractical to survey all teachers. A list of participants was acquired from the Texas Teachers of Agricultural Science & Technology Directory (1999-2000). A formula for estimating sample size recommended by Cochran (1977) was used. By using this formula, it was determined that a sample of 180 was sufficient. Over-sampling was used because past surveys of agriscience teachers have shown low response rates. A total of 200 names were selected from the Directory using sampling techniques as described by Borg and Gall (1994). The sample is proportional and stratified by the area. Due to the large number of agricultural science programs in Texas, the state is divided into ten areas. Dillman's (1978) suggested response rate (70 percent), was used to determine a minimum return rate.

Instrumentation

In an effort to control for non-response error, portions of the Total Design Method (TDM) developed by Dillman (1978) was adopted as "tested guidelines on construction of the cover letter and questionnaire" (Miller & Smith, 1983, p. 46).

The survey was composed in a booklet format according to TDM. The first part was used to determine demographic information from the subjects. The second divided into two sections. Part two-A was designed to survey which competencies the agriscience teachers believed to be the most adequate and useful in instruction. Part two-B consisted of a four-point Likert-type scale using questions to determine perceptions of perceived abilities of agriscience teachers to teach the material. The competencies used in the survey were obtained from the existing Texas Agriscience 315 curricula.

The responses for each item in question were scored from 1 to 4 according to the Likert-type scale (1= poor, 2 = fair, 3 = good, 4 = excellent).

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Establishing Validity and Reliability of the Instrument

Validity and reliability in this case refers to the method being used and will indicate the degree to which the evaluation device actually provides evidence of the outcomes desired (Tyler, 1975). Content validity of the instrument was established by submitting a draft of the instrument to a panel of agricultural teacher educators. The panel's recommendations were used to verify the validity of the instrument's content. A pilot test of the instrument was conducted using a test-retest method. The student teaching block in a major Texas university was surveyed for the pilot test. Changes and clarifications were incorporated into the final version of the instrument prior to distributing the survey.

Data Collection

The "Claim for Exemption" form was approved by the human subject committee, and data collection began the second week of April 2000, after using a mailed survey instrument. Procedures recommended for data analysis came from Dillman's (1978) Total Design Method. A cover letter, questionnaire, and return, stamped envelope was mailed to each of the teachers randomly selected for the sample. The first mailing occurred on April 4, 2000, and was received by the teachers during the second week of April.

Each questionnaire was coded to identify the respondents and non-respondents. Reminder post-cards were also mailed to all non-respondents on April 17, 2000. On April 28, 2000, a second mailing of the questionnaire, accompanied with a cover letter and a self-addresses, stamped envelope was sent to each of the non-respondents followed two weeks later (May 12, 2000) by a second mailing of reminder post-cards to non-respondents. A total of 145 surveys were returned. The response rate for this study was 72.5%.

Data Analysis

Survey instrument responses were coded and transferred into a computer file for analysis. Statistical analyses of the data files were completed using SPSS. Descriptive statistics were used to summarize the data pertaining to: (a) the demographic background; (b) teacher responses concerning competencies to be taught; and (c) perceived level of teaching skill for each competency. Frequencies were used to describe the data.

Findings

Characteristics of Respondents

The mean years of teaching for the respondents was 17.2 years, and they taught agricultural education for an average of 15.9 years. A majority of respondents (67.4%) have had no experience in agricultural communications and 67.4% of teachers have also never taught agricultural communications.

Over one-third (36.9%) of teachers were in single teacher departments, although the largest number of teachers (41.8%) were in two teacher programs.

Most of the teachers (70.7%) taught in a 3-A school or smaller and the average amount of students enrolled in agriculture courses was 137. Production agriculture was the predominant agricultural curriculum being taught (73.4%).

An overwhelming amount of teachers (93%) were male. The average age of the respondents was 42 years, with the youngest being 23-years-old and oldest 61-years-old. Furthermore, a substantial majority of agriscience teachers (88.8%) were white/non-Hispanic.

Percent Level of Agreement with Competencies

Level of Agreement for Communication Techniques and Procedures

Teachers were given six competencies for communication techniques and procedures and asked to indicate whether it should or should not be included in the curriculum. The highest rated competency was "Communicating Verbally." A large majority (99.3%) indicated this competency should be included in the agricultural communications curriculum for high school students. Other competencies receiving a 90% level of agreement or higher included "Preparing and Delivering Speeches" (97.9%), "Interviewing Skills and Procedures" (97.9%), "Researching and Communicating Factual Information" (96.5%), "Communicating Non-Verbally" (94.3%), and "Speaking Style" (91.5%).

Level of Agreement on Effective Written Communication Skills

Three of these competencies were perceived as beneficial by more than 90% of the teachers to be included in the agricultural communications curriculum. "Preparing a Written Informative Report" had the highest positive response rate (95.8%). Second was "Targeting an Audience and Choosing a Method of Delivery" (90.8%). Slightly lower was "Recognizing Bias Information in Written Materials" (90.1%), and the lowest percentage was "Identifying Your Writing Style" (77.9%).

Level of Agreement of Employment Characteristics of a Successful Worker in the Modern Workplace

The employment characteristics of a successful worker in the modern workplace were perceived by the teachers as suitable components for the agricultural communications curriculum. The highest rated of these competencies was "Career Opportunities" with 98.6% of the agriscience teachers indicating that it should be included in the high school curriculum. Other competencies receiving a 90% level of agreement or higher included "Supervised Agricultural Experience Activities" (97.9%) "Selection and Application of Employer Expectations" (97.9%), "Workplace Safety" (95.8%), "Career Development Relating to Entrepreneurship and Employment" (95.1%), "Interpersonal Relations" (95.1%), "Social, Organizational, and Technological Systems" (92.9%), and "Information Processing" (91.5%). Last was "Resource Allocation in Systems of Operation in Agricultural Communications" with 87.2% of the teachers indicating that it should be included in agricultural communications curriculum.

Level of Agreement for Effective Visual Communication Skills

Competencies involving effective visual communication skills were also indicated as appropriate for high school agricultural communications curriculum: "Using Technology in

Agricultural Communications" (92.9%), "Using Photography in Effective Communications" (81.6%), and "Preparing Video-Essay and Photo-Essays" (73.8%).

Perceived Level of Teaching Skill

Level of Teaching Skill for Communication Techniques and Procedures

Teachers were asked to indicate their level of teaching skill as it pertained to each competency (based on a scale of 4 = excellent; 3 = good; 2 = fair; and 1 = poor). Findings revealed a relatively high level of teaching skill in all four competencies. Competencies, ranked in order of level of teaching, were "Communicating Verbally" (3.20), "Identifying Interviewing Skills and Procedures" (3.13), "Communicating Non-verbally" (2.99), "Researching and Communicating Factual Information" (2.94), "Preparing and Delivering Speeches" (2.92), and "Developing Your Speaking Style" (2.83).

Level of Teaching Skill for Effective Written Communication Skills

The respondent all indicated they have a good level of teaching skill for the four competencies in relation to written communication skills. Ranked in order from highest level of teaching skill to lowest were, "Preparing a Written Informative Report" (3.0), "Targeting an Audience and Choosing a Method of Delivery" (2.9), "Recognizing Bias Information in Written Materials" (2.8), and "Identifying Your Writing Style" (2.6).

Level of Teaching Skill for Employment Characteristics of a Successful Worker in the Modern Workplace

Employment characteristics of a successful worker in the modern workplace involved nine competencies. All responding agriscience teachers believed they had a good or better level of teaching for each competency. In order from highest level of teaching skill, "Career Opportunities" (3.5), "Supervised Agricultural Experience Activities" (3.5), "Selection and Application of Employers Expectations" (3.2), "Personal and Occupational Safety Practices in the Workplace" (3.1), "Career Development Relating to Entrepreneurship and Employment" (3.0), "Interpersonal Relations" (3.0), "Social, Organizational and Technological Systems" (2.8), "Information Processing" (2.8), and "Resource Allocation in Systems of Operation in Agricultural Communications" (2.6).

Level of Teaching Skill for Effective Visual Communication Skills

Findings illustrate that teachers believed they only possess a good level of teaching towards "Using Technology in Agricultural Communications" (2.5). "Preparing Visual-Essays and Photo-Essays" (2.4), and "Using Photography in Effective Communications" (2.2) received a fair level of teaching skill.

Conclusions

The following conclusions are based on interpretations of data presented in the study and are restricted to populations surveyed.

1. Most of the agriscience teachers in Texas who taught in the 1999-2000 school year were middle-aged, non-minority males who were very experienced in the teaching profession (17 years on average) and teaching agriculture.

2. The large majority (67%), of the teachers had little or no experience in the field of agricultural communications. Respondents that had experience had taught the material for very few years.

3. A large majority of teachers work in smaller schools (3- A or smaller) and are the only teacher in the program or at best have one partner. On average they have a small enrollment of students in agricultural courses. Despite changes in agriculture, the overwhelmingly predominant curriculum being taught is production agriculture.

4. As a group, agriculture teachers in Texas agree that all six of the competencies related to communication techniques and procedures should be incorporated in the agricultural communications curriculum (91% or higher).

5. Teachers also indicated their perceived level of teaching skill pertaining to communication techniques and procedures as good with "Communicating Verbally" ranking the highest (3.2), and "Developing Your Speaking Style" the lowest (2.8).

6. A high percent of teachers also responded positive to the four competencies for written communication skills being incorporated into the curriculum. Percents ranged from 96% (preparing a written informative report) to 78% (identifying your writing style).

7. Agriscience teachers perceived themselves as good, but not excellent teachers of written communication skills. This was evidenced by the mean level of teaching skill ranging from 3.0 (preparing a written informative report) to 2.6 (identifying your writing styles).

8. Employment characteristics of a successful worker in the modern workplace competencies were also highly rated as appropriate to be included in the agricultural communications curriculum. All nine competencies ranked 90% or higher in favor of competencies being included, with the exception of "Resource Allocation" which received 87.2%.

9. Again, agriscience teachers perceived themselves to be proficient in teaching employment characteristics of a successful worker. This was concluded by teachers responding with a range of teaching skill from 3.5 to 2.6. This resulted in a good level of teaching skill.

10. Competencies pertaining to effective visual communication skills were perceived by teachers to be included in the agricultural communications curriculum with the level of agreement ranging from 92.9% with "Technology in Agricultural Communications" to "Preparing Video-essays and Photo-essays" with 73.8%. However, they were ranked the lowest of all groups of competencies.

11. The greatest need in terms of agricultural communications perceived level of teaching skill was for competencies relating to effective visual communication techniques. This was indicated by teachers only indicating a good level of teaching skill for "Technology in the Classroom" (2.5%), and the remaining two "Using Photography in Effective Communications" and "Preparing Video-essays and Photo-essays" only a fair level of teaching skill.

Recommendations

The following recommendations were made as a result of this study:

1. Updates and revisions to the existing Agriscience 315 need to be made to incorporate more background information about the career field of agricultural communications and the new technological advancements being made in media instruction (i.e., computer-aided design, web development, etc.).

2. Since agricultural communications is a relatively new course in the Texas agriscience curriculum, many agriscience teachers may not be aware of the complete extent of the field. Additional information of the breadth and scope of the field should be provided for current agriscience teachers to make them aware of the goals, expectations and accomplishments of agricultural communications. This could be in the form of informational brochures and/or an interactive website.

3. Writing workshops should be conducted at the annual State Agriscience Teacher Professional Improvement Conference to help the agriscience teacher become more familiar with techniques used in writing for the mass media. Additional topics for workshops that should be provided annually to improve instruction include: utilizing technology to enhance agricultural communications instruction, enhancing verbal communications (preparing and delivering speeches), information processing, and resource allocation in systems of operations in agricultural communications.

4. A concerted effort should be made to utilize the expertise of agricultural communications professionals in the classroom to help educate students on certain competencies when the individual agriscience teacher(s) has limited knowledge of the area (for example, video-essays and photo-essays).

5. Future studies should be conducted to determine if competencies beyond those in the current agriscience 315 curriculum should be included and if any existing competencies need to be excluded from the Texas agricultural communications curriculum. Additional research should also be conducted to determine specific methods of instruction, which are most appropriate to teach agricultural communications competencies.

6. Additional studies should be conducted to determine the expectations of university personnel and professionals of high school graduates of agricultural communications courses.

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